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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/581,835

06/05/2006

Tor Kihlberg

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10/13/2010

GE HEALTHCARE, INC.

IP DEPARTMENT 101 CARNEGIE CENTER

PRINCETON, NJ 08540-6231

EXAMINER

PERREIRA, MELISSA JEAN

ART UNIT

PAPER NUMBER

1618

MAIL DATE

DELIVERY MODE

10/13/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/581,835	Applicant(s) KIHLEBERG ET AL.	
	Examiner MELISSA PERREIRA	Art Unit 1618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 13-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2010 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-25 are pending in the application. Claims 13-25 are withdrawn from consideration. Any objections and/or rejections from previous office actions that have not been reiterated in this office action are obviated.

Drawings

The amendment to the drawings is acknowledged and accepted.

Response to Arguments

1. Applicant's arguments filed 9/10/10 have been fully considered but they are not persuasive.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Diksic et al. (*Int. J. Nucl. Med. Biol.* **1982**, 9, 283-285) in view of Suzuki et al. (EP0282703B1) and Shiba et al. (US 4,458,302) and in further view of Kihlberg et al. (US2004/0197257A1) as stated in the office action mailed 5/13/10.

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4. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kihlberg et al. (US 7,521,544B2) in view of Diksic et al. (*Int. J. Nucl. Med. Biol.* **1982**, 9, 283-285) as stated in the office action mailed 5/13/10.

5. Applicant asserts that Diksic et al. does not disclose, teach or suggest utilizing a concave mirror in place of a high pressure mercury vapor lamp.

6. The instant claims are not drawn to "utilizing a concave mirror in place of a high pressure mercury vapor lamp" but states that a "high pressure reaction chamber and a UV light source wherein the high pressure chamber having a window facing a concave mirror." Thus, the method comprises both a high pressure mercury vapor lamp and a concave mirror.

7. Diksic et al. was not used to teach of a concave mirror in place of a high pressure mercury vapor lamp but was used to teach the production of high specific activity (no-carrier-added) [^{11}C]phosgene wherein [^{11}C]carbon monoxide was mixed with research purity chlorine flowing at 10 ml/min and the mixture was irradiated with an u.v.-lamp.

8. Suzuki et al. was used to teach of a UV radiation source which comprises a high pressure mercury vapor lamp, a concave mirror and a shutter which can be opened and closed wherein the radiant lights containing ultraviolet rays, which are emitted from the high pressure mercury lamp, are reflected by the concave mirror.

9. Shiba et al. was used to teach of the use of concave mirrors for convergence of the light emitted from a Xe-Hg lamp.

10. At the time of the invention it would have been obvious to one skilled in the art to substitute the UV radiation source which comprises a high pressure mercury vapor

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lamp, a concave mirror of Suzuki et al. for the UV assembly of Diksic et al. as the substitution of similar/comparable devices, wherein the technique is applicable to the base device, to generate the desired effect, such as converging all of the UV light to provide for the efficacious generation of $^{11}\text{COCl}_2$. It would be advantageous to one skilled in the art to utilize the UV radiation source of Suzuki et al. comprising a concave mirror to converge all of the light emitted from the UV source for a more efficient labeling synthesis.

11. At the time of the invention it would have been obvious to one ordinarily skilled in the art to utilize the high pressure reaction chamber for the labeling synthesis/preparation of $[^{11}\text{C}]$ phosgene of Diksic et al. as the high pressures can increase reaction rates and minimize the amounts of reagents required (see Kihlberg et al. p1, [0007]) as both (Diksic et al. and Kihlberg et al.) disclosures are drawn to the method of labeling synthesis utilizing $[^{11}\text{C}, ^{13}\text{C}, ^{14}\text{C}]$ carbon monoxide.

12. Applicant asserts that Suzuki et al. does not disclose, teach or suggest using a high pressure mercury vapor lamp.

13. Suzuki et al. does teach of a UV radiation source which comprises a high pressure mercury vapor lamp, a concave mirror and a shutter which can be opened and closed wherein the radiant lights containing ultraviolet rays, which are emitted from the high pressure mercury lamp, are reflected by the concave mirror.

14. Applicant asserts that Kihlberg et al. does not disclose, suggest, or teach utilizing ^{11}C , ^{13}C or ^{14}C carbon monoxide enriched gas-mixture for preparing ^{11}C phosgene.

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15. Kihlberg et al. was not used to teach of utilizing ^{11}C , ^{13}C or ^{14}C carbon monoxide enriched gas-mixture for preparing ^{11}C phosgene but was used to teach of the production of [^{11}C , ^{13}C , ^{14}C]carbon monoxide enriched gas-mixture for labeling synthesis via a.) providing carbon-isotope dioxide in a suitable carrier gas (i.e. nitrogen, etc.); b.) converting carbon-isotope dioxide to carbon-isotope monoxide by introducing said gas mixture in a reactor device; c.) trapping carbon-isotope monoxide in a carbon monoxide trapping device, wherein carbon-isotope monoxide is trapped but not said carrier gas; d.) releasing said trapped carbon-isotope monoxide from said trapping device in a well defined micro-plug, whereby a volume of carbon-isotope monoxide enriched gas-mixture is achieved.

16. Diksic et al. was used to teach of the production of high specific activity (no-carrier-added) [^{11}C]phosgene wherein [^{11}C]carbon monoxide was mixed with research purity chlorine flowing at 10 ml/min and the mixture was irradiated with an u.v.-lamp.

17. At the time of the invention it would have been obvious to one ordinarily skilled in the art to utilize the [^{11}C , ^{13}C , ^{14}C]carbon monoxide enriched gas-mixture of Kihlberg et al. for the preparation of [^{11}C]phosgene of Diksic et al. as it provides for the nearly quantitative conversion of the carbon-isotope monoxide into labeled products and the resulting labeled compound is highly concentrated (Kihlberg et al. p1, [0010],[0012]).

18. Applicant asserts that Diksic et al. does not disclose, teach or suggest using a high pressure reaction chamber as disclosed in Kihlberg et al.

19. Diksic et al. was not used to teach using a high pressure reaction chamber as disclosed in Kihlberg et al. but was used to teach of the production of high specific

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activity (no-carrier-added) [^{11}C]phosgene wherein [^{11}C]carbon monoxide was mixed with research purity chlorine flowing at 10 ml/min and the mixture was irradiated with an u.v.-lamp.

20. Suzuki et al. was used to teach of a UV radiation source which comprises a high pressure mercury vapor lamp, a concave mirror and a shutter which can be opened and closed wherein the radiant lights containing ultraviolet rays, which are emitted from the high pressure mercury lamp, are reflected by the concave mirror.

21. Shiba et al. was used to teach of the use of concave mirrors for convergence of the light emitted from a Xe-Hg lamp.

22. Kihlberg et al. teaches of the method of labeling synthesis wherein the method comprises a.) introducing the carbon-isotope monoxide (i.e. [^{11}C , ^{13}C , ^{14}C]carbon monoxide) enriched gas-mixture into a reaction chamber, having a liquid reagent inlet and a labeling reactant inlet ([^{11}C , ^{13}C , ^{14}C]carbon monoxide); b.) introducing, at high pressure, the liquid reagent; c.) waiting a predetermined time while the labeling synthesis occurs; d.) removing the labeled liquid reagent from the reaction chamber.

23. At the time of the invention it would have been obvious to one skilled in the art to substitute the UV radiation source which comprises a high pressure mercury vapor lamp, a concave mirror of Suzuki et al. for the UV assembly of Diksic et al. as the substitution of similar/comparable devices, wherein the technique is applicable to the base device, to generate the desired effect, such as converging all of the UV light to provide for the efficacious generation of $^{11}\text{COCl}_2$. It would be advantageous to one skilled in the art to utilize the UV radiation source of Suzuki et al. comprising a concave

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mirror to converge all of the light emitted from the UV source for a more efficient labeling synthesis.

24. At the time of the invention it would have been obvious to one ordinarily skilled in the art to utilize the high pressure reaction chamber for the labeling synthesis/preparation of [^{11}C]phosgene of Diksic et al. as the high pressures can increase reaction rates and minimize the amounts of reagents required (see Kihlberg et al. p1, [0007]) as both (Diksic et al. and Kihlberg et al.) disclosures are drawn to the method of labeling synthesis utilizing [^{11}C , ^{13}C , ^{14}C]carbon monoxide.

Double Patenting

25. Claims 1-7 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-7 of U.S. Patent No. 7,521,544 in view of Diksic et al. (*Int. J. Nucl. Med. Biol.* **1982**, 9, 283-285) as stated in the office action mailed 9/10/10.

26. Claims 8-12 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 8-11 of copending Application No. 12/423,034 as stated in the office action mailed 9/10/10.

27. Applicant asserts that they will file a suitable terminal disclaimer in the event that this application is deemed allowable.

28. Terminal disclaimers have not been filed at this time and therefore the rejections are maintained.

Conclusion

29. No claims are allowed at this time.

30. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELISSA PERREIRA whose telephone number is (571)272-1354. The examiner can normally be reached on 9am-5pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Hartley can be reached on 571-272-0616. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael G. Hartley/
Supervisory Patent Examiner, Art Unit 1618

/Melissa Perreira/
Examiner, Art Unit 1618